Lives at Risk: Malaria and Pregnancy

Wherever malaria exists, pregnant women are at risk.

The darker areas of the map indicate areas of higher malaria prevalence.

In Africa at least 24 million pregnancies are threatened by malaria each year. Less than 5% of pregnant women have access to effective interventions.

Malaria during pregnancy is a risk to both mother and baby

- For women...
  In particular, primigravid and HIV + women are at greater risk for increased parasitemia and therefore, anemia, severe malaria, and death.
- For infants...
  Placental infection leads to low birthweight, a major factor in infant illness and death.

Malaria and HIV

HIV+ pregnant women in Africa of all parities have a higher prevalence and density of malarial parasitemia than HIV- women. Additionally, placental parasitemia increases risk of death among infants of HIV+ pregnant women.

Malaria in Africa is estimated to cause-

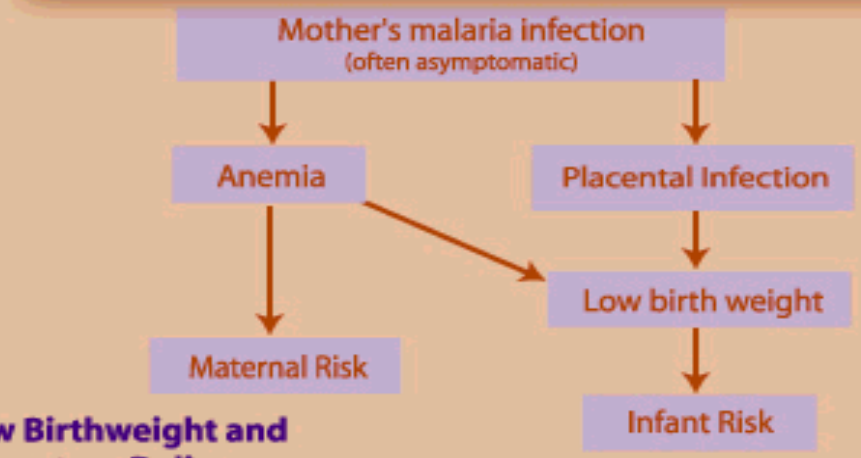
* up to 15% of maternal anemia and
* 35% of preventable low birthweight

The Risks of Malaria in Pregnancy

Anemia

Malaria is a significant contributing factor to anemia. If severe, anemia puts women at risk of hemorrhage and death. Maternal anemia increases the risk of premature delivery and a low birthweight baby.

When maternal malaria immunity is low, a serious risk of maternal or infant death exists. When acquired maternal immunity is high, there is still risk.



Low Birthweight and Premature Delivery

Malaria infection of the placenta is a major contributor along with anemia to low birthweight and premature delivery. Even if an infected mother does not have a fever, the baby is still at risk.

Increased Risk of Severe Malaria

Pregnancy reduces a woman's immunity to malaria, making her more susceptible to severe malaria than other adults. Treatment of acute malaria is more complicated in pregnancy.

Every pregnant woman should receive two doses of sulfadoxine-pyrimethamine (SP) or weekly chloroquine treatment and sleep under an insecticide-treated bednet.

Intermittent Presumptive Treatment (IPT)

Two treatment doses of sulfadoxine-pyrimethamine (SP) given to all pregnant women even without symptoms can significantly reduce the negative consequences of malaria during pregnancy. This treatment is safe, effective, deliverable, and cost-effective. Even one dose of SP has been shown to reduce placental malaria. In populations where HIV risk is high, more doses may be necessary throughout pregnancy. Currently, the drug of choice is SP, but new drugs are being developed and tested and may also prove effective in the future.

Chemoprophylaxis

In areas where resistance to chloroquine is still relatively low, weekly prophylaxis with chloroquine may protect pregnant women. However, compliance is often difficult to ensure.

"In Malawi, where IPT with SP has been the policy since 1993, a recent survey found that 75% of pregnant women had received at least one dose of the drug during pregnancy (30% at least two doses). Women receiving SP during pregnancy had significantly lower rates of placental infection (reduced from 32% to 23%) and low birth weight babies (a reduction from 23% to 10%). SP during pregnancy also reduced the rates of maternal anemia."
Rogerson, 2000 in press

Insecticide Treated Bednets

Sleeping under a treated bednet protects pregnant women from malaria-infected mosquitoes and their babies from placental infection. Ideally, all women of child-bearing age should sleep under treated nets, protecting the child from the time of conception.

Take Action to Protect Pregnant Women from Malaria

At the Abuja Summit, 31 African heads of State resolved to provide effective malaria interventions to 60% of women by 2005.

Policies: Adopt and implement policies on anti-malaria drugs and protocols for malaria in pregnancy.

Commodities: Ensure availability and affordability of effective anti-malarial drugs and insecticide-treated bednets. Consider reducing taxes and tariffs on necessary commodities: netting, insecticides, drugs, bednets, etc.

Education: Support efforts to raise awareness of malaria and pregnancy among different target populations, including maternal/reproductive/adolescent health workers, HIV/AIDS counselors and program managers, community workers and peer counselors, women and men in the community.

Partnerships: Build partnerships between maternal health services and malaria control programs through Roll Back Malaria.

The Relative Cost-effectiveness of Malaria Interventions

Interventions Used	Cost per DALY ($)*
Children under nets treated with permathrin twice annually	$52
Presumptive treatment in pregnancy with 2 doses of SP in areas of no resistance	$12
Chemoprophylaxis with weekly chloroquine throughout pregnancy	$21

* The DALY is a health outcome measure that incorporates premature death and morbidity/disability. It is used to compare interventions that save lives or improve quality of life. As a broad guideline, an intervention is considered "highly attractive" if the cost per DALY averted falls entirely below $25, and "attractive" if it falls below $150.

In highly malarious western Kenya, preliminary analysis indicates that women who were protected by insecticide-treated bednets every night in their first three pregnancies delivered approximately 25% fewer babies who were either small for gestational age (SGA) or born preterm, compared with women who were not protected.
ter Kuile et al, 2000 in preparation

Malaria and Pregnancy Resources

Documents

Malaria and Pregnancy Network
The Secretariat is housed at:
Johns Hopkins School of Public Health
e-mail: MPnet-I@jhsph.edu

Annals of Tropical Medicine and Parasitology, Vol. 93, Supplement1, December 1999. This supplement summarizes the proceedings of a Malaria in Pregnancy Workshop held in Liverpool, UK, September 1998. (www.tandf.co.uk/journals)

The American Journal of Tropical Medicine and Hygiene, Vol. 55, Number 1, Supplement, 1996. This supplement presents the research results on malaria prevention in pregnancy from the Mangochi Malaria Research Project, Malawi.

"Severe Falciparum Malaria" in *Transactions of the Royal Society of Tropical Medicine and Hygiene*, Vol. 94 Supplement 1, April 2000. ISSN 0035-9203. This supplement presents the latest recommendations on treatment of severe malaria, including treatment during pregnancy.

Mother-Baby Package: Implementing Safe Motherhood in Countries, World Health Organization, 1994. In the prevention, early detection, and management of complications section under "Anemia in pregnancy," one of the strategies to control anemia is for "pregnant women in holo-endemic areas (malaria prevalence >75%) [to] be given anti-malaria prophylaxis according to country policies." (pp. 27-29)

Essential Health Sector Actions for Maternal Nutrition in Africa. Huffman SL, et al. LINKAGES project, Academy for Educational Development, 2000 (forthcoming). This manual describes six actions, including actions against malaria, that health programs should implement to improve women's nutritional status.

Economic Analysis of Malaria Control in Sub-Saharan Africa. Goodman C., Coleman P., and Mills A., Global Forum for Health Research, Strategic Research Series, 1999. This document provides a full cost and cost-effectiveness analysis of malaria interventions, including those targeting pregnancy. (www.globalforumhealth.org)

Websites and other information sources

World Health Organization, www.who.int/health-topics/malaria.htm
UNICEF, www.unicef.org/programme/health/index.htm
Malaria Foundation, www.malaria.org
Malaria Consortium, www.lshtm.ac.uk/itd/dcvbu/malcon/Malcon.htm
Roll Back Malaria, www.rbm.who.int, http://mosquito.who.int/cgi-bin/rbm/login_rbm.jsp
The Integrated Management of Pregnancy and Childbirth (IMPAC) is a strategy for reducing maternal and perinatal mortality and morbidity and improving maternal and newborn health, including malaria interventions. For further information please contact Dr. Monir Islam, Department of Reproductive Health and Research, WHO/Geneva, islamm@who.ch.

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